

used for continued communications.

Tactical Channels (TAC 1 - TAC 4)

These channels are reserved for use by agencies involved in interagency communications. Incidents requiring multi-agency participation will utilize these channels as directed by the control agency assuming responsibility for an incident or area of concern. These tactical Channels 1 through 4, are allocated to each sub-region as primary and secondary, such that co-channel interference will be minimized. The following is a schedule of tactical channel assignments for each of the sub-regions.

| COUNTY | STATE | TAC CHANNEL | | COUNTY | STATE | TAC CHANNEL | |
|----------------|-------|----------------|-----|------------------|-------|----------------|-----|
| | | PRI | SEC | | | PRI | SEC |
| 1. Adams | PA | 1 | 4 | 21. Fulton | PA | 3 | 2 |
| 2. Allegheny | PA | 1 | 4 | 22. Greene | PA | 1 | 4 |
| 3. Armstrong | PA | 2 | 3 | 23. Huntingdon | PA | 3 | 2 |
| 4. Beaver | PA | 4 | 1 | 24. Indiana | PA | 1 | 4 |
| 5. Bedford | PA | 4 | 1 | 25. Jefferson | PA | 4 | 1 |
| 6. Blair | PA | 4 | 1 | 26. Juniata | PA | 4 | 1 |
| 7. Butler | PA | 3 | 2 | 27. Lawrence | PA | 2 | 3 |
| 8. Cambria | PA | 4 | 1 | 28. McKean | PA | 1 | 4 |
| 9. Cameron | PA | 2 | 3 | 29. Mercer | PA | 1 | 4 |
| 10. Centre | PA | 4 | 1 | 30. Mifflin | PA | 2 | 3 |
| 11. Clarion | PA | 1 | 4 | 31. Perry | PA | 4 | 1 |
| 12. Clearfield | PA | 1 | 4 | 32. Potter | PA | 1 | 4 |
| 13. Clinton | PA | 3 | 4 | 33. Snyder | PA | 3 | 2 |
| 14. Crawford | PA | 2 | 3 | 34. Somerset | PA | 1 | 4 |
| 15. Cumberland | PA | 3 | 2 | 35. Union | PA | 1 | 4 |
| 16. Elk | PA | 3 | 2 | 36. Venango | PA | 4 | 1 |
| 17. Erie | PA | 1 | 4 | 37. Warren | PA | 3 | 2 |
| 18. Fayette | PA | 4 | 1 | 38. Washington | PA | 2 | 3 |
| 19. Forest | PA | 2 | 3 | 39. Westmoreland | PA | 3 | 2 |
| 20. Franklin | PA | 2 | 3 | | | | |

COMMUNICATIONS REQUIREMENTS

Network Operation Method

A network will be established on the calling channel, CALL. This network will be wide area to cover large sections of the Region. Multiple networks may be required to fully cover the outlying areas of the Region. Multi-state coverage networks may be monitored by a selected agency in the Commonwealth of Pennsylvania, i.e., State Police Communications. Communications systems on TAC 1 - TAC 4 will be implemented by agencies who place trunking systems on line. Every geographic section of the Region is intended to be covered by at least one of the working channels. Mobile relays on TAC 1 - TAC 4 may be provided for limited coverage to permit reuse of the channel within the Region or in adjacent Regions.

Encryption Standards

The use of encryption in the Region 36 Plan is encouraged by agencies, who requires the need to conduct covert operations assuring communications security. The Plan recommends encryption techniques which provide high levels of security as well as a high level of voice recognition. It is also required that systems operating within the Region which utilize digital encryption algorithms, be transmitted in a digital format, and so that bit rates will not exceed the 25 KHz channel bandwidth. Agencies that interoperate with Federal agencies in covert operations may be required to use secure communications that comply with standards set by the National Security Agency. Standards vary according to classifications and are based on the sensitivity and nature of the

information to be exchanged. Many agencies, such as the FBI, US Customs, DEA, and the Coast Guard, who interoperate with State and Local agencies are required to use encryption which meets FIP-S42 (see also Federal Standard 1027 & 1024) data encryption standard. To provide encryption, all communication system infrastructures should be digital capable, that is capable of passing encrypted digital communications through a system(20K0F3E). A digital capability capable at base stations allow State, Local, and Federal agencies the use of units on any of these systems in the encrypted mode. Digital capability will accommodate agencies with S160 agreements and will provide anticipated future interoperability requirements. The nature of communications on the five (5) common channel pairs supports the National Mutual Aid system as designated for tactical operations, disaster and emergency management, as well as local and regional interoperability. The ability to operate securely on these channels could also protect and enhance these operations. The capability of these channels to support secure communications is strongly recommended.

Use of Long Range Communications

During major incidents of where public safety requirements might include the need for long range communications in and out of a disaster area, alternate radio communications methods should be addressed by each primary Public Safety Dispatch Center in the Region. At minimum, agencies operating such centers shall integrate the appropriate interface either electrically or through a dispatcher to interconnect with

COMMUNICATIONS REQUIREMENTS

the five (5) national channels. Expanded regional radio communications might be achieved through amateur radio operations, satellite communications and/or long range HF/SSB emergency preparedness communications systems. These techniques should be incorporated as part of the communications plan of all agencies. These techniques can provide the means to communicate outside an area when agencies need assistance. Instances addressed in the National Public Safety Planning Advisory Committee's Plan, such as earthquakes, hurricanes, floods, widespread forest fires or nuclear reactor problems justify the use head for long range communication capabilities.

Use of Cellular Telephone

The incorporation of switched public telephone network (SPTN) in a planned radio system could plug a vital part in public safety communications. To provide this capability, Region 36 strongly recommends the use of cellular telephones in areas where (and when) cellular service is available. In addition, this Regional Plan encourages the use of dispatcher intervention when telephone interconnection to any planned radio system is proposed. Routine, day-to-day operations, using of automatic telephone interconnects, should be used solely on a secondary basis and may not be used to determine loading requirements used to justify additional channels. Accordingly, interconnected traffic may cause loading of air time where the use of cellular telephones might not impact so dramatically. However, in exceptional circumstances (such as the cellular system becoming inoperable due to loading or equipment malfunction, or in those areas where there is no cellular telephone

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service) automatic telephone interconnection may be used to provide
access to the SPIN.

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IMPLEMENTATION AND PROCEDURES

Notification

All interested parties were invited to participate in the development of this Regional Plan. An Official Notification was accomplished by the FCC issuing a Public Notice and by the "convener" directly notifying organizations representing eligibles. In addition, the mobile communications print media was contacted by the "convener" and made aware of the Committee's formulation. Also notified were the appropriate government contacts through out the Region. See "Appendix H"

Evaluation Sub-Committee

The Evaluation Sub-Committee shall consist of the Chairman of the Region 36 Committee and the Task Group Facilitators for the Region 36 Committee. In addition, the APCO Frequency Advisor for Pennsylvania shall serve as a member of this sub-committee.

Frequency Allocation Process

The attached flow chart, (Appendix A) entitled "800 MHz Frequency Allocation Process", shows the sequence of events to be followed by The Region 36 Planning Committee in the process of allocating the six megahertz of 800 MHz spectrum. This process follows the guidelines established under the National Plan for Public Safety Spectrum Relief.

IMPLEMENTATION & PROCEDURES

The Region 36 Plan incorporates a filing window concept which will provide for the evaluation of all applications for the available spectrum at the same time. The evaluation matrix process is as follows:

Upon approval of the Region 36 Plan by the Federal Communications Commission (FCC) the six megahertz of spectrum is made available for allocation. The allocation is placed in the frequency pool (Block #1). If frequencies are available in the pool (a second iteration of the evaluation matrix could occur if all frequencies are not allocated on the first iteration) a window opening announcement is made (Block #2). The window period will be two (2) calendar months or 60 days, (Block #3 thru Block #4) with early or late applications rejected (Block #5). Those applications which are received during the window period are reviewed by the Pennsylvania Frequency Advisor (Block #6). The Advisor will determine if the application is in compliance with the State Plan, if a State Plan exists (Block #7). An application that is not in compliance will be returned to the applicant with an explanation of changes required to be compliant. Having complied with State Plan and provided a needs assessment (Block 9) has been provided, the Evaluation Sub-Committee will apply the Evaluation Matrix (Block 10). The Evaluation Sub-Committee is defined as: one (1) member (four (4) minimum) from each area of eligibility, including the Frequency Advisor who are also members of the Planning Committee for Region 36.

The implementation of the Evaluation Matrix will result in the

award of a score for each application. That score is the total of the points awarded in seven categories, with a maximum possible score of 1000 points, as outlined in Appendix B. The seven (7) categories are as follows:

EVALUATION MATRIX

I. SERVICE (Block #11) - maximum score 350 points. Each of the eligible services has a predetermined point value. That point value ranging from 0 to 35 is multiplied by ten (10) to determine the score for the Service Category. An applicant with multiple services, within an entity will be scored on the basis of the number of different services that each system serves in the total system. That is, a system which is 80 percent police and 20 percent school administration (local government) would be awarded a total of 20 points.

II. INTEROPERABILITY (Block #12) - maximum score 100 points. The application is scored on the degree of interoperability that is demonstrated with a range of points from 0 to 100. This category does not rate the application on the inclusion of the mandated five common channels for interoperability. This category rates the application on its capability to communicate with different levels of government and services during times of emergency.

III. LOADING (Block #13) - maximum score 200 points. Applicants demonstrating that they are part of a cooperative, multi organization system will be scored on a range of 0 to 150 points depending upon the extent of the cooperative system. An expansion of an existing 800 MHz

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system will be scored on a range of 0 to 50 points, depending upon the degree of expansion. A system could be an expansion of an existing 800 MHz system and a cooperative system as well and as a result receive the combined point values for these two sub-categories for a maximum value of 200 points.

IV. SPECTRUM EFFICIENT TECHNOLOGY (Block #14) - maximum score 50 points. This category scores the applicant on the degree of spectrum efficient technology that the system demonstrates. A point value range of 0 to 50 points can be awarded for this category. A trunked system would be considered a spectrum efficient technology as well as any technological systems feature which is designed to enhance the efficiency of the system and provide for the efficient use of spectrum.

V. SYSTEMS IMPLEMENTATION FACTORS (Block #15) - maximum score 100 points. This category scores the applicant on two factors, fiscal responsibility and planning completeness. The degree of fiscal responsibility is scored on a range of 20 to 50 points. Applicants demonstrating that the system proposed can be constructed within the required construction period will receive the full score of 50 points. Applicant's having no financial commitment nor approved budget (0 to 19 points) will be considered "speculative" and will be dismissed as defective in the current window under consideration. Each applicant will be scored on the degree of planning completeness with a range of scoring from 10 to 50 points. Applicants will be required to submit a time table for

the implementation of the communications system or systems (10 points).

VI. GEOGRAPHIC EFFICIENCY (Block #16) - Maximum point value of 100 points. Each applicant will be scored on the level of geographic efficiency based on the following factors; total number of radio units (including control stations), the number of frequency pairs requested, and the square miles covered. For a line zone system the square mile figure will be replaced by the length in miles of the line.

VII. GIVEBACKS (Block #17) - maximum score 100 points. The applicant is scored in two sub-categories, each having a point range of 0 to 50; the number of channels given back and the extent of availability of those channels to others. The greater the number of channels given back, the higher the score. The greater the level of availability of the give-backs, the higher the score will be in this sub-category.

Points are totaled for each application (Block #18) and the applications are prioritized by the Evaluation Sub-Committee (Block #19). The frequency pool is allocated (Block #20) and the Regional Plan is updated. The plan is then sent to the FCC for review and approval as outlined in the Report and Order Docket 87-112 (Block #21). Upon approval of the plan by the FCC, the applicant will be notified and the prepared (FCC Form 574) applications are submitted to APCO for coordination (block 22), after successful processing and site consideration, the FCC would grant the license to the applicant (Block #23).

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The system implementation is monitored by the Local Frequency Advisor who determines if progress is made on the implementation of the system (Block #24). If progress is made (Block #25) the system is ultimately implemented (Block #26). If progress is not made the licensee is warned of the consequences of his lack of progress (Block #27). The Commonwealth of Pennsylvania Frequency Advisor continues to monitor implementation progress (Block #28). If the continued monitoring indicates that progress is still not being made the licensee is notified of pending action to withdraw the license (Block #29). The notified licensee can appeal this action (Block #30) or can allow the license to be withdrawn (Block #31). If the allocated frequencies are withdrawn they are added back to the frequency pool (Block #32) and the process starts a second iteration at Block #1.

Implementation Schedules (Slow Growth)¹

The majority of eligible public safety organizations are either of State and Local government, or else are subject to governmental regulation. The nature of governmental planning and budgeting processes, combined with difficult revenue constraints, prohibits most eligibles from implementing newer technology systems in the normal time required by FCC Rules (8 months for construction of conventional stations, 12 months for trunked stations).² In most cases, public safety systems will require multi-year phased-implementation schedules requiring three to five times as long to construct as private or commercial systems.

Regional, wide-area, and statewide systems may require even longer periods to construct.

In view of these known situations, this Regional Plan has established an extended implementation schedule ("slow growth") in accordance with FCC Rules³ which is available to all eligible applicants, if requested by stating "SLOW GROWTH" on the license application.

A "SLOW GROWTH" schedule will allow up to three years for completion of station construction. Regardless of station construction time however, the FCC five-year channel loading requirement (of mobiles, portables and RF control stations) is maintained by this Region Plan.

Applicants who clearly request "SLOW GROWTH" on their license application are not required to submit the specific items of "SLOW GROWTH" justification otherwise required by FCC Rules.

Applicants who propose a station construction schedule which is longer than the three-year "SLOW GROWTH" schedule, or a channel loading schedule (for mobiles, portables, and RF control stations) beyond five years, are required to submit a Request for Waiver for such additional extensions of time in accordance with FCC Rules.

Appeal Process

Throughout the frequency allocation process applicants are given opportunities to appeal decisions which have caused rejection of their application. The appeal process has two levels; APCO and the FCC. An applicant who decides to appeal a rejected application should initiate that appeal immediately upon notification of rejection. In the event

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that an appeal reaches the second level, the FCC, their decision will be final and binding upon all parties.

1. This section of the Plan was accomplished through an amendment to the FCC.
2. See FCC Rules and Regulations 90.155 (a) and 90.631 (e).
3. See FCC Rules and Regulations 90.629, 90.631 and 90.633.

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EPILOGUE

The development of an operational plan providing for frequency assignment within Region 36 has been achieved with the effort, support and time by the parties of interest. The formulating committee has had the advantage of a wide range of individual representation and the assistance of Regional Plans already operating throughout the country. The objective, upon which it has been devised, recognizes current and future public safety needs including the interoperability among users (for both the new allocation and for those presently using 806/821 & 851/866 MHz.Band). The plan further recognizes the importance and proper use of the common mutual aid channels also established by the allocation.

Of great importance was the need to insure that the plan be flexible enough to provide for expansion of systems. System modifications must not be unduly restricted in order to employ evolving applications and technologies nor to provide voice/data encryption. The interdiction of high speed data transmission from and to mobile units as well as between base stations and links, must offer highly efficient alternatives to traditional technologies and will serve both inter and intra disciplinary modes of operation.

EPILOGUE

No matter how proficient, our plan is not without its caveats. More than likely any deficiency will be caused not by ignorance but in the absence of a more convincing argument supporting another alternative. An issue requiring refinement will be the obvious interaction of coordination required between Regions. Frequency demands near borders is sure to create conflict between Committee assignment criteria. In the case of Region 36, the Commonwealth of Pennsylvania is a divided Region which conceivably could require as many as eight (8) Regional concurrences for the assignment of a single channel if used statewide.

The cumulative effect of this added coordination activity will impose strain upon the system and may profoundly effect the resources which may be approved for use.

The establishment of this plan under which allocations will be made, require a much greater emphasis upon short range rather than long range telecommunications planning. Because the Federal Communications Commission has indicated that it intends to grant waivers in cases which are fully justifiable, the nature of waivers will soon be accepted as reasonably assured and become practice. By assuming that greater emphasis be placed in awarding allocation consideration to funded rather than speculative or integrated rather than isolated systems, many of these waivers may not be necessary if long range planning is credible.

For almost every assignment criteria proposed, an adjustment will more than likely need to be made. Planning groups wishing to conclude their work in order to provide an approved allocation rationale must also provide for suitable policy revisions should the need arise.

The issue of engineering standards in signaling and equipment systems has clearly been resolved in the record but remains as an issue of controversy. The long range effect of no set standard will be hard to predict. Yet it may be possible for interface software to solve the manufacturing incompatibility problem in the future with imposition of such standards. In addition, manufacturers who develop equipment and systems with ease of frequency agility can maximize the effectiveness of any mistakenly assigned frequencies or whole scale readjustment which may be required in an on going program. Such capability would be very desirable and definitely enhance the Frequency Coordinating Group's task of maximizing systems.

Finally, the committee encourages the development of user groups to resolve economies of scale, and facility sharing arrangements, or future systems. Perhaps legislation could enhance the attractiveness of such sharing by protecting users from unsuspected liabilities characteristic of such participation.

The potential for the creative use of this resource and the effective use of the reserve are at complete odds. If current resources are totally maximized then reserves may be slow to be assigned or assigned elsewhere. If on the other hand Committees are liberal in their assignments, the reserves may be reached far sooner than predicted. This self-defeating conflict of interest will play a part in the effectiveness of all planning and coordination group of activities. The

EPILOGUE

FCC should provide some assurance now that reserves will be provided so that initial efforts will not be undermined.

***** End *****

800 MHZ FREQUENCY ALLOCATION PROCESS













